



(11)

EP 4 425 515 A3

(12) **EUROPEAN PATENT APPLICATION**

(88) Date of publication A3:
16.04.2025 Bulletin 2025/16

(43) Date of publication A2:
04.09.2024 Bulletin 2024/36

(21) Application number: **23215884.0**

(22) Date of filing: **12.12.2023**

(51) International Patent Classification (IPC):
H01G 4/232 (2006.01) **H01G 4/30** (2006.01)
H01G 4/012 (2006.01) **H01G 4/008** (2006.01)
H01G 4/12 (2006.01)

(52) Cooperative Patent Classification (CPC):
H01G 4/30; H01G 4/232; H01G 4/2325;
H01G 4/0085; H01G 4/012; H01G 4/12

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB
GR HR HU IE IS IT LI LT LU LV MC ME MK MT NL
NO PL PT RO RS SE SI SK SM TR
Designated Extension States:
BA
Designated Validation States:
KH MA MD TN

(30) Priority: **13.02.2023 KR 20230018666**

(71) Applicant: **Samsung Electro-Mechanics Co., Ltd.**
Suwon-si, Gyeonggi-do 16674 (KR)

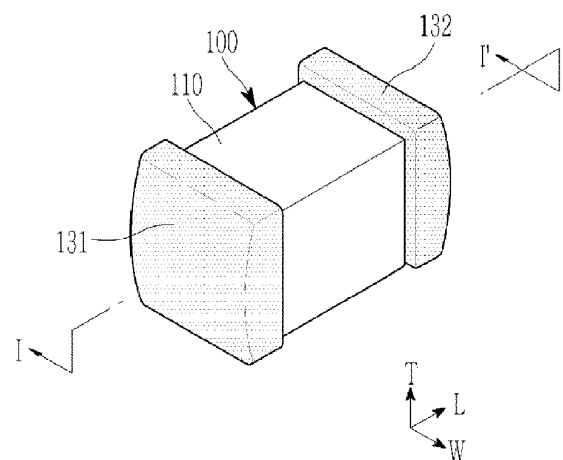
(72) Inventors:
• **Yi, Jaeseok**
Suwon-si, Gyeonggi-do (KR)
• **Park, Seonho**
Suwon-si, Gyeonggi-do (KR)
• **Kim, Do Yeon**
Suwon-si, Gyeonggi-do (KR)
• **Kang, Sunghyung**
Suwon-si, Gyeonggi-do (KR)

(74) Representative: **Grünecker Patent- und**
Rechtsanwälte
PartG mbB
Leopoldstraße 4
80802 München (DE)

(54) **MULTILAYERED CAPACITOR AND METHOD FOR MANUFACTURING THE SAME**

(57) A multilayered capacitor includes a capacitor body including a dielectric layer and an internal electrode, and an external electrode outside the capacitor body, in which the external electrode includes a first layer disposed outside the capacitor body and including a first conductive metal, a second conductive metal, and an alloy thereof, and the first layer includes an inner layer including an alloy portion disposed at a portion meeting the dielectric layer and including the alloy, and a diffusion portion disposed at a portion meeting the internal electrode and including the first conductive metal, a third conductive metal included in the internal electrode, an alloy thereof, or a combination thereof.

FIG. 1





EUROPEAN SEARCH REPORT

Application Number

EP 23 21 5884

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	US 2018/166215 A1 (HAMANAKA KENICHI [JP] ET AL) 14 June 2018 (2018-06-14) * paragraphs [0001], [0024], [0034], [0037], [0058], [0060], [0061]; figures 1,2,3 *	1-15	INV. H01G4/232 H01G4/30 H01G4/012 H01G4/008
A	CN 112 447 396 A (SAMSUNG ELECTRO MECH) 5 March 2021 (2021-03-05) * paragraph [0128] - paragraph [0136]; figure 6 *	1-15	ADD. H01G4/12
A	US 2022/238278 A1 (NISHIURA SHIN [JP] ET AL) 28 July 2022 (2022-07-28) * paragraphs [0088] - [0094]; figures 4J, 4K, 4L *	1-15	
			TECHNICAL FIELDS SEARCHED (IPC)
			H01G
The present search report has been drawn up for all claims			
Place of search		Date of completion of the search	Examiner
Munich		4 March 2025	Abdullayeva K., N
CATEGORY OF CITED DOCUMENTS			
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document			
T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO.

EP 23 21 5884

5

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

04 - 03 - 2025

10

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2018166215 A1	14-06-2018	KR 20180066851 A	19-06-2018
		US 2018166215 A1	14-06-2018

CN 112447396 A	05-03-2021	CN 112447396 A	05-03-2021
		CN 116387023 A	04-07-2023
		CN 212676108 U	09-03-2021
		CN 215417894 U	04-01-2022

US 2022238278 A1	28-07-2022	JP 2022114762 A	08-08-2022
		US 2022238278 A1	28-07-2022

15

20

25

30

35

40

45

50

55

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82